

**REMARKS**

Claims 28-43, 45-56, 59, 61-67 and 70-82 are pending. Each of the claims has been rejected.

The amendment to claim 28 is supported by claim 29.

Claim 29 is being canceled.

Upon entry of this amendment, claims 28, 30-43, 45-56, 59, 61-67 and 70-82 will be pending

No new matter has been added. Entry of this Amendment is respectfully requested.

**I. Claim Rejections Under 35 U.S.C. §102**

At paragraph 4 of the Office Action, claims 28-43, 45-52, 59, 61-67 and 70-82 are rejected under 35 U.S.C. §102(b) as being anticipated by Natan et al (USP 6,149,868, issued October 28, 1998).

The Examiner states that Natan discloses a system and a composition, both comprising a test sample and one or more metal particulars arranged on a solid support which is a SER-active substrate.

Applicants respectfully traverse the instant rejection for the following reasons. Each of the independent claims has been amended to replace the transitional phrase “comprising” with “consisting essentially of.” Thus, the claims exclude those components that would have a material effect on the basic and novel characteristics of system and composition claimed.

As to claim 28, this claim has also been amended to limit the solid support to supports made of glass or quartz. Thus, claim 28 recites a system comprising a test sample and metal particles arranged on a solid glass or quartz support. In contrast, the system of Natan is a sandwich structure where the metal particles and test sample are adsorbed or covalently attached to a SERS substrate (see, e.g., “summary of the invention” in col. 3). Thus, while the claims of the present invention recite the use of a solid glass or quartz support, the analogous component of Natan is a SERS substrate.

The only discussion regarding the composition of the SERS substrate in Natan is found in the first full paragraph, at col. 24. Therein, reference is made to SERS substrates made of Ag and Au. The only other reference to the material comprising the SERS substrate is in the claims, such as claims 2 and 3. Nowhere does Natan disclose the use of a solid glass or quartz support (see also col. 1, lines 16-19). While the Examiner suggests that Natan discloses the use of borosilicate glass at col. 8, line 14, Applicants respectfully note that this component is in addition to the other three components (test sample, metal particles and SERS substrate). Indeed, the fundamental basis of the invention taught in Natan is based on the use of both the metal particles and a metal SERS substrate (see, e.g., col. 2, lines 49-62).

Natan does not disclose a system comprising a test sample, metal particles and a solid glass or quartz substrate. In each of the embodiments of Natan, the SERS substrate is included, which as discussed above, is a metal substrate required to produce enhanced vibrational spectral intensities. As indicated above, even when a borosilicate glass component is included in Natan, a metal SERS substrate is included as well.

Use of the metal SERS substrate of Natan in place of, or in addition to, the solid glass or quartz substrate would clearly have a material effect on the basic and novel characteristics of Applicants' invention. The skilled artisan would understand a solid glass or quartz substrate to be an inert surface, and to thus provide no contribution to the physics of the system recited in the pending claims. Replacement of such an inert surface with a metal surface, or inclusion of a second metal surface, would be expected to have unpredictable effects of the physics of the system recited in the pending claims, especially in view of the fact that the metal particles of the system of the pending claims have a direct effect on the intrinsic fluorescence of the biomolecules found in the test sample used in the system.

Accordingly, the system of Natan does not teach each and every element of the system as claimed in claim 28. Nor would the skilled artisan expect that the SERS substrate of Natan could substitute for the solid glass or quartz substrate of the pending claims, or be included as an additional component, without having a material effect on the basic and novel characteristics of the invention as claimed.

With regard to independent claims 46 and 67, neither of these claims includes a solid support. Further both claims have also been amended to replace the transitional phrase “comprising” with “consisting essentially of.” Thus, these claims also exclude those components that would have a material effect on the basic and novel characteristics of system and composition claimed. For the reasons discussed with regard to claim 28, the inclusion of the metal SERS substrate of Natan in the system of claim 46 or the composition of claim 67 would be expected to have a material effect on the basic and novel characteristics of these inventions as well.

In view of these comments and the amendments to the claims, Applicants respectfully request reconsideration and withdrawal of this rejection.

## **II. Claim Rejections Under 35 U.S.C. §103(a)**

At paragraph 5 of the Office Action, claims 46-56, 59, 62-67 and 71-82 are rejected under 35 U.S.C. §103(a) as being unpatentable over Natan et al. as applied to claims 46 and 67 above, and further in view of Lakowicz et al (WO 99/36779, issued July 22, 1999).

The Examiner states while Natan does not specifically teach where a biomolecule is labeled with an extrinsic fluorescent marker, which can be a fluorophore, Lakowicz teaches that fluorophores can be conjugated to biological molecules, and that it would have been obvious to one of ordinary skill in the art to modify the biomolecules of Natan by labeling them with fluorophores, as suggested by Lakowicz, with a reasonable expectation of success.

Applicants respectfully traverse the rejection for the reasons set forth above with regard to Natan. Briefly, as discussed above, the claims are limited to the components recited in the claims and those components that do not have material effect on the basic and novel characteristics of the invention. Natan teaches the use of a metal SERS substrate. The skilled artisan would readily expect that inclusion of such a metal substrate in the systems and compositions of the pending claims would have a material effect on the basic and novel characteristics of the invention. Accordingly, Natan does not teach each and every element of the invention as claimed. Citation to Lakowicz does nothing to address this issue.

Therefore, neither Natan nor Lakowicz, alone or in combination, makes the claims as amended obvious and Applicants respectfully request reconsideration and withdrawal of this rejection.

### **III. Conclusion**

In view of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

In the event any variance exists between the amount of fees paid upon filing this document and the Patent Office charges for filing this document, including any fees required under 35 CFR 1.136 for any necessary extension of time to make the filing of this document timely, please charge or credit the difference to Deposit Account No. 13-2725. Further, if these papers are not considered timely filed, then a request is hereby made under 37 CFR 1.136 for the necessary extension of time.

Respectfully submitted,

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